

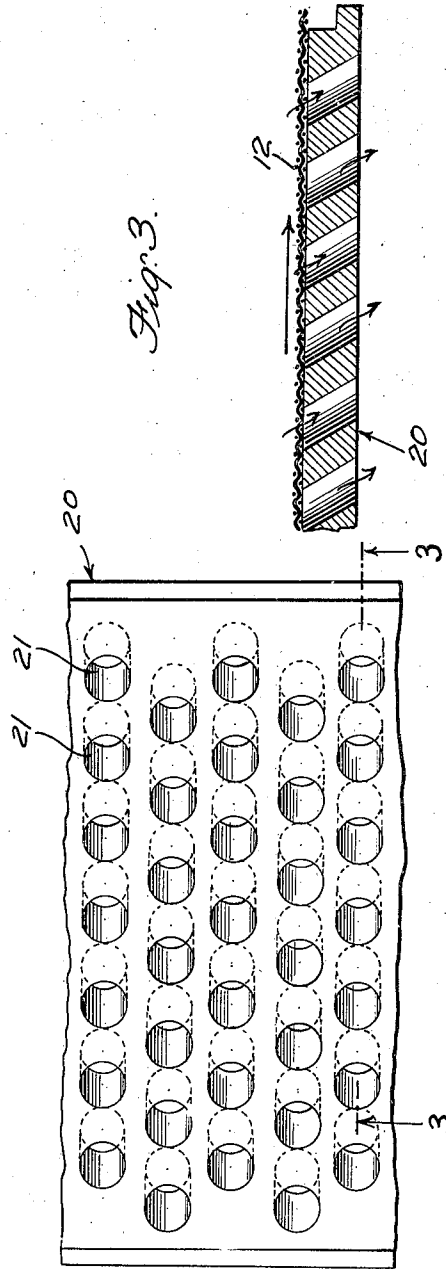
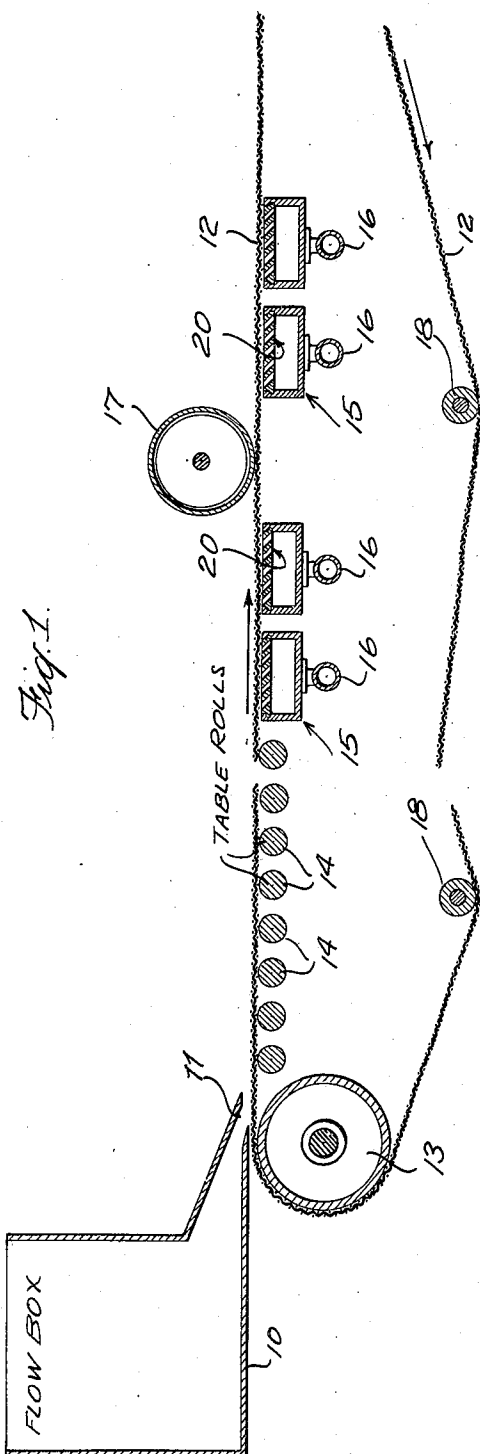
Nov. 8, 1949

G. R. WADLEIGH

2,487,202

SUCTION BOX COVER

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UNITED STATES PATENT OFFICE

2,487,202

SUCTION BOX COVER

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1 Claim. (Cl. 92—51)

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My invention relates to improvements in suction boxes for use in Fourdrinier or cylinder machines wherein they are employed to remove water or other liquid through either the wire, as in a Fourdrinier, or through felts, as in a cylinder machine.

My invention is predicated upon my discovery that substantial advantages result from inclining in the direction of travel of the wire or felt, the suction box cover passages which extend from the outside to the inside of the cover, i. e., by displacing the orifices which may be in the inner surface of the cover in respect to the corresponding ones on the outer surface thereof in the direction of travel of the wire or felt. By so inclining these passages the water leaving the side of the wire or felt adjoining the cover, instead of meeting perpendicular walls, meets inclined walls which tend to direct the water away from the wire or felt instead of allowing part of it to splash back to and through the wire or felt. The effect of this is that less vacuum is required inside the suction box which in turn means that there is less pressure on the wire or felt against the adjoining surface of the suction box, and this results in less power required to drive the wire or felt and a longer life of the same because of the decreased amount of friction.

My invention is illustrated in the accompanying drawing, in which:

Fig. 1 is a view in vertical section of a typical Fourdrinier machine showing the table rolls and suction boxes;

Fig. 2 is an enlarged plan view of a portion of a suction box cover embodying my invention;

Fig. 3 is a view taken on section 3—3 of Fig. 2.

Referring more particularly to Fig. 1, 10 denotes the flow box of the machine having a flow opening 11 above which a constant head of stock is maintained by means not shown. The wire 12 passes around the breast roll 13, thence over table rolls 14 and over a plurality of suction boxes 15, each connected with a suction pipe 16. A dandy roll 17 is shown above the wire; the latter after passing around the couch roll, not shown, begins its return or underpass back to the breast roll 13 for which a plurality of guide rolls are provided some of which are shown and designated by the numeral 18.

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Each suction box 15 is provided with a removable cover 20 having perforations which may be of varying shapes 21 therein, which instead of affording passages normal to the wire or felt, extend from the top of the cover to the bottom in a direction inclined to the direction of travel of the wire. The cover may be made of any of the customary materials such as wood, Micarta, etc. By inclining the holes in this manner, the substantial advantages above enumerated are realized. Since one of the greatest causes of wear of the wire is the friction over the suction boxes, any diminution of such friction as by operation of my present invention is of primary importance. By having the holes 21 cylindrical as shown or at least of uniform cross section throughout their length, the area of the holes next to the wire and consequently the rate of drainage does not change as the thickness of the cover diminishes from wear.

I claim:

In a Fourdrinier machine having an endless wire and a suction box beneath same for the removal of water from the web of paper being formed, the improvement which consists of the combination of the foregoing with a stationary cover for said box, which cover is perforated with suction passages each of which is of substantially uniform cross section throughout its length and substantially all of which passages have a substantial inclination from the top to bottom of the cover in the direction of travel of the wire.

GEORGE R. WADLEIGH.

REFERENCES CITED

The following references are of record in the file of this patent:

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Disclaimer

2,487,202.—*George R. Wadleigh*, Hastings on Hudson, N. Y. SUCTION BOX COVER. Patent dated Nov. 8, 1949. Disclaimer filed Nov. 17, 1950, by the inventor, owner of one-half interest.

Hereby enters this disclaimer to as much of the claim of said patent as is in excess of the following:

In a Fourdrinier machine having an endless wire and a suction box beneath same for the removal of water from the web of paper being formed, the improvement which consists of the combination of the foregoing with a stationary cover for said box, which cover is perforated with suction passages each of which is of substantially uniform and of substantially circular cross section throughout its length and substantially all of which passages have a substantial inclination from the top to bottom of the cover in the direction of travel of the wire.

[*Official Gazette December 19, 1950*]